

NICARAGUA

ARAP

**Agriculture Reconstruction Assistance
Program**

Trip Report

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Chemonics International Inc.

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Dates

May 22, 2000
May 23, 2000
May 24, 2000
May 25, 2000
May 26, 2000
May 27-31, 2000
May 29, 2000
May 30, 2000
May 31, 2000
June 1, 2000
June 2, 2000
June 3, 2000
June 12, 2000
June 13-15 ,2000
June 16, 2000
June 17-21, 2000
June 22, 2000

Visits

Travel- Panama - Managua
Managua- Ocotal-Esteli
Esteli – Quilali - Managua
Managua
Managua – Matagalpa – Managua
Managua
Managua
Managua
Managua
Managua – Esteli – Managua
Managua
Travel – Managua – Panama
Travel – Panama - Managua
Managua
Managua – Somoto - Managua
Managua
Travel – Managua - Panama

Persons Contacted

Augusto Harmogenes Ibarra – ASOCAES Member
Frank Norori - POLDES General Manager
Marta Arostegui – General Manager AMDDES (Asociación de Mujeres Desempleadas)
Alex Talavera – CONOR 3-80 Representative
Adán González -CONOR 3-80 Representative
Salvador Talavera – CONOR 3-80 General Manager
Reinaldo Fiallos - AROMA NICA
Johana Fiallos – Fundación Fiallos
Francisco Lanza - ASOCAFEMAT President
Efrain Valenzuela - ASOCAFEMAT member
Francisco Montiel – General Manager ASOCAFEMAT
Porfirio Zepeda – General Manager – UCA Miraflores
Javier Castrellon – Town Mayor- La Sabana
Ray Baum – AID Managua Head ERD
Efrain Laureano – AID Managua Mission Economist
Tomas Membreño – AID Managua – Mitch Activities Coordinator
Mario Brockman – AID Managua CTO

Purpose of Trip

Visit coffee production areas in Nicaraguan coffee (Ocotal, Quilali, Matagalpa) production areas and evaluate on needs for coffee processing infrastructure.
Provide technical assistance to grower groups in coffee processing alternatives and marketing logistics.

Results

May 23

Traveled from Managua together with James Johnson and Ali Valdivia and met with several representatives of different grower group associations at UCAFE. The participants explained their marketing and production problems and hence their need for technical assistance in those fields.

Main problems discovered:

- 1) Most farmers deliver their coffees to a middleman (beneficios) on a pre-contracted basis that usually involves a cash advance or credit towards ag inputs in exchange for coffee when the harvest begins. Final liquidation at the end of the harvest results in a poor return because of what they quote are “hidden costs” passed on to them by the beneficio.
- 2) Quality problems due to lack of proper processing infrastructure.
- 3) Lack of understanding on quality issues and the mechanics as an avenue to international market penetration
- 4) Lack of understanding of mechanics of the international coffee market.
- 5) Lack of adequate road infrastructure to the production areas.
- 6) Lack of proper production technology.
- 7) No funding alternatives other than provided by dry mills.

AMDES meeting:

Visited AMDES offices in Octotal where we had chance to discuss on their coffee processing project. This group which seems well organized, extends credit to some of its members. A project proposal was presented for evaluation and further discussion during meeting set up for the following week during a programmed visit to Esteli on June 1st.

Aroma Nica meeting.

Met with Reinaldo Fiallos whom explained the nature of their project, (Fundación Fiallos) which involves production technical assistance to 240 small growers in the surrounding areas to guarantee an increase in yields and a better quality coffee for the export market. Mr. Fiallos fully understands the concept of marketing specialty coffees and how to incorporate the small grower into the picture. Six wet mills will be strategically located in Las Sabanas, San Lucas and Somoto areas to receive and process the cherry beans. The Las Sabanas locations will be Encino, Quebrada Hondo and Castillo. In San Lucas the wet mills will be located in Chichicaste-Cogolillo and Apante. And finally in Somoto the wet mill is to be located in Quebrada de Agua. Once de-pulped, fermented and washed the parchment coffee will be hauled to the existent dry milling facilities in Somoto. His operation could become perhaps a role model for other organizations to follow. He is very quality oriented and very meticulous in his work paying special attention to detail...a key element success in a specialty coffee marketing program. His contacts with key players in the SCAA, the Canadian Special Coffee Association and export experience both are a plus in the over all success of this project.

May 24th

Visited CONOR 3-80 representatives, Mr. Alex Talavera and Adan Gonzalez in Quilali. Mr. Talavera's farm (Zapotillal) at 700 meters above sea level is a great model for gravity-irrigated plantations under shade conditions. Making use of the numerous water resources

Mr. Talavera has built a water reservoir at a higher elevation on his plantation from which he supplies his sprinkler systems distributed though out the farm. Production in his area will be earlier compared with neighboring farms without irrigation. His production cycles have practically been cut in half which will allow him to perceive income at year 1.5 after transplant contrary to year 3 in traditional non irrigated fields.

Water resources here could be utilized for hydropower generation, to provide electricity for processing equipment. We instructed on how to take total head and penstock length measurements for a possible recommendation on hydroelectric turbine alternatives and total output calculations.

Compacted soils at the seedbed stage were observed and recommendations provided to improve soil preparation for future nurseries.

Visited with Mr. Augusto Harmogenes Ibarra at his farm and wet milling operation in Quilali and dry mill set up in Palacaguina.

Mr. Harmogenes has a 200-mz farm of which 80 are planted to coffee at a 900-1200 meter above sea level. Overall cultural practices in the farming operation are adequate but need improving. Coffee flowering at the time promises a bumper crop this year. Building infrastructure for wet mill installation has been already built lacking only a roof and is complete with siphon floatation tank, 5 fermentation tanks, and washing canals. He estimated a total \$20,000 was invested however was never utilized due to lack of security in the area and forcing him to relocate on a roadside property instead. Currently he is using a Penagos de-pulping machine, which produces a non-fermented, non-washed coffee. Coffee samples were provided for further evaluation of cupping quality in order to detect any potential problems due to improper handling after de-pulping. According to Mr. Harmogenes during harvest time they collect cherry beans twice during the day to take to their wet milling operation. After the wet process the coffee is hauled to Palacaguina (1.5 hour trip) where the dry milling operation is located. Mr. Harmogenes processes coffee for 2 other growers both with enough volume to at least fill a container load for the export market.

The milling process here using the Penagos Equipment has cut costs down considerably in eliminating the need for washing coffee. It has not contributed favorably to the overall quality of the product due to delayed drying times after de-pulping as it to be hauled during night hours to the beneficio seco. By the time this coffee reaches the beneficio it has already been sitting wet, for at least 12 hours and coupled to this another 8 hours before sunlight begins its drying process can contribute to an onset of uncontrolled fermentation and hence decline in cup quality.

May 25

Worked at the ARAP office contacting equipment providers and setting up budget.

May 26

Traveled to Matagalpa and met with ASOCAFEMAT board of directors and visited some of the coffee producing areas together with General Manager, Francisco Montiel to evaluate on wet mill locations and general logistics for processing plant set up.

ASOCAFEMAT had recently applied and had been approved for a grant from the European Community to purchase dry milling machinery. They will be applying for ARAP/CHEMONICS funds to set up a series of wet mills. This association has a total of

1800 members producing approximately 120,000 quintals (300+ potential container loads). They have identified the need for at least 7 wet mills to service their members. Organization of this association seems very good although they will need assistance in understanding the operation of their beneficios. It is still unclear to them that in installing the entire milling infrastructure they will immediately be ready for the export market. They see the beneficio as an opportunity to provide a personalized service to each member instead of providing a collective service to benefit all of their members. Their concept of marketing and export seems to locally replicate the New York coffee futures exchange for each individual member to decide on market positions for their coffee regardless of the quantity and qualities involved and regardless of the fact that they are not exporting. Visited some of the production areas where ASOCAFEMAT members are located. Road infrastructure in some areas is one of the limiting factors in determining location for the wet mills. In others, the farms are close enough that the farmers would not have problems transporting their cherries to the centralized wet mill.

May 27th

Worked at the ARAP office.

May 29th

Visited Sabina de Ingenieria to evaluate on locally made coffee-processing equipment. Worked on cost and design alternatives of the different machinery manufactures.

May 30th

Met with Frank Norori- POLDES General Manager and Marlene Caceres – POLDES Vice President. Poldes currently has 46 active members however they provide services to more than 2500 families which they help finance coffee, cattle and grain production projects. There are approximately 300 coffee growers involved with a total of 4000 mz planted as shaded coffee. Average yields are in the range of 3-7 qq/mz. Similar to other grower groups, POLDES has the same logistics problems in designing their new coffee processing facilities. Growers are spread out in different production regions (Dipilto, San Fernando, Jalapa and Murra) that lack adequate road infrastructure and electricity. I explained to them how to think out their project and of the need to centralize as much as possible all processing equipment. They seemed to grasp the general idea and agreed to deliver a project proposal by no later than June 2, 2000.

Met with Johana Fiallos whom brought for discussion a very ambitious roasting plant operation. I suggested to start with a smaller roasting operation than the one proposed and perhaps target the local Nicaraguan market until they could develop sound roasting experience, a signature name and coffee blends that would be representative for future export market development.

May 31st

Met with Francisco Montiel from ASOCAFEMAT at the ARAP office. No project proposal was presented however we discussed on overall logistics in setting up different centralized cherry bean receiving stations versus one centralized wet mill. Mr. Montiel understood now on the need to standardize criteria in order to produce a better quality product. Also contrary to our first meeting they are now more in track with the role

ASOCAFEMAT would be adopting in processing coffees for its members and taking advantage of the total volumes to be marketed. It was clear to them now how difficult it would be to provide an individualized service to each of their members. He agreed to present a project proposal by June 8th.

Met with Salvador Talavera from Conor 3-80 at the ARAP office. We discussed the submitted project and explained to him of general logistics in managing a quality-oriented coffee milling operation. Conor 3-80 plans to service 400 members each cultivating approximately 5 mz with an annual yield of 8.33 quintals/mz. In an attempt to provide centralized wet milling centers they have identified the following locations: Mozonte, San Fernando, Quilali, Telpaneca and San Juan de Rio Coco. Access to these communities and the lack of electrical power will limit the processing capacities in most locations. It was suggested to him to contemplate relocating to one centralized wet mill and dry mill with access to water and electrical power. The above-mentioned locations can still become centralized receiving stations, but only in the cherry stage. Transport logistics would involve then transporting the cherry beans to the one centralized mill. Mr. Talavera understood the changes being implied, however was a bit skeptical whether it could be implemented and adopted by his fellow growers. He agreed to consider the alternatives and to re-evaluate the project proposal.

June 1st

Traveled to Esteli together with Pablo Jiron and met there with Ali Valdivia and Miguel Angel Rodriguez.

Met with Porfirio Zepeda (UCA Miraflores) with whom we traveled to visit some of the coffee production areas. UCA Miraflores is involved in organic coffee production for which he said they are currently certified by OCIA.

The purpose of the visit to some of the fields was to evaluate on road infrastructure and distances from the growing areas to where centralized wet mills could be located. Roads are relatively stable and should allow the transport of cherry beans to the receiving stations with no problem.

There are approximately 110 coffee producing members in UCA Miraflores formed by 7 coops namely Cooperativa de Heroes y Martires del Cebollal, Cooperativa de Mujeres Martires del Cebollal, Cooperativa Jose Benito Jimenez, Cooperativa Vicente Talavera, Cooperativa La Unidad and Coopertiva El Triunfo. Altitudes in the producing areas vary from 1200 to 1400 meters above sea level, which are optimal for Strictly Hard Beans (SHB).

UCA is interested in installing wet mill and dry mill operations in order to process an estimated 3000-quintal per year output. Last year they sold 400 quintals supposedly for an export market. It was clear after discussing with him that UCA was never the exporter although they still see it as their export product. A middleman whom exported the coffee under his name not UCA negotiated the coffee and hence no direct contacts have been made by the Coop to further pursue this market. In installing the beneficios they would collectively have an opportunity to market all their productions. UCA's focus is more into organically produced coffees but only 25% of its growers are currently organic, the rest farm traditionally. Initial efforts have only been targeted to organically grown coffees and hence not providing any marketing services to the rest as they consider them "disqualified".

It was pointed to Porfirio that they should look into marketing all of the production regardless whether it was organic and not.

In deciding how their project would work we identified the need to install one wet mill and one dry mill located in Esteli where UCA currently owns land. Since the growing areas are relatively close to Esteli the transport logistics should not be a big issue more so since the group owns 3 high capacity trucks and 2 pickups which could provide a coffee cherry delivery service for each member to the centralized mill.

In an effort to maintain and promote organic coffee production UCA has established a small laboratory run by women for the production of Beauveria Bassiana, a biological control for broca (coffee borer). The lab has a production capacity of 60 doses per day, which are enough inoculums to produce a suspension for half a manzana at a cost of 30 Cordoba (\$2.47USD).

At the end of the meeting with Porfirio he promised to deliver a project proposal in request for ARAP-Chemonics funds.

Met with Martha Arostegui from AMDES at Ali Valdivia's house. We discussed their project proposal, which consists of installing one centralized wet and dry mill. This group represents a total of 500 members producing more than 30,000 quintals per year (roughly 75 container loads) of coffees from 1100 meter above sea level locations. The proposed mill will be located in Ocotal where AMDES has a 7062m² lot purchased last year for this purpose and with access to water and electricity. They understood the need to transport cherry beans to the wet mill, which will require a change for the grower in delivery logistics. They said they could coordinate daily pickup of ripe cherries from centralized receiving stations and deliver to a wet mill in Ocotal.

This group will require technical assistance in operating a wet/dry mill as well as sound marketing advice to handle the coffee volumes involved.

June 2nd, 2000

Worked at the ARAP office on report and evaluating on project proposals.

June 12-15, 2000

Worked at ARAP office meeting again with some of the association representatives to further discuss on their projects.

Met with Salvador Talavera whom had discussed with growers in his area of the proposal to centralize wet and dry milling operations. Wet mill locations have now been proposed to be located one in Mozonte and the other in Quilali. The Mozonte location will service Mozonte, San Fernando, Ciudad Antigua and Dipilto members. The Quilali location will service Quilali, San Juan, Wiwili, Murra and Jicaro members. With this plan they anticipate servicing more members than in their first proposal. The dry mill would be located in Mozonte which is roughly 80 kilometers from Quilali. Conor would then have the responsibility of structuring the transport logistics from the fields to the wet mills and from the wet mill to the dry mill in Mozonte. They will need to negotiate with truckers in the area for better rates. Currently the set rate is approximately 12 cordobas per quintal. Obviously coffee cherries weigh much more than parchment coffee and the same rate would not be applicable. During the coffee harvest however it would create a constant demand on transport alternatives on a daily basis and cheaper rates could be negotiated with

the truckers. We agreed to visit the area on Monday June 19 to further evaluate on possible location alternatives for milling infrastructure.

Met with AMDES General Manager, Marta Arostegui to further discuss on their project. AMDES has decided not install wet milling infrastructure in Ocotal because they lack enough water for the process, which is contrary to their original presentation. They are not interested in relocating the wet mill portion and have decided to drop this part of their project and concentrate only on the dry mill infrastructure.

With this new approach AMDES seems more interested in running a dry mill with similar characteristics as the facilities already available to the grower and so much critiqued by them. Since farmers do not have access to credit they would rely on the AMDES figure for their financing. AMDES will have access to PMA funds to finance the harvest and with the dry milling facilities would be able to provide the same milling services as other existing beneficios and hence would fall into the same category of the “evil middleman” if they do not differentiate their services. The issues of improving quality and improving marketing alternatives for the growers seem to have been forgotten by this group.

Met with Miguel Gomez from the Nicaraguan Gourmet Coffee Association and Sergio Zamora from the Programa Nacional de Competitividad Aglomerado del Sector Cafetalero. I explained to them the Panama experience in organizing its coffee industry and of the importance in developing a solid front for Nicaragua as a coffee producing origin of *quality* coffees. This will involve getting all parts of the industry to concur and project a generic image of Nicaragua. The program being proposed consists in education and promotion activities through a series of events to address the following:

- Organic or Ecologically responsible coffee production
- Wet and Dry milling technology
- Coffee sector Institutional Development
- International Marketing of Nicaragua Coffees
- Regionalizing Coffee Qualities

The above is the beginning of a Nicaragua model for coffee sector development and will compliment and strengthen ARAP projects or any other project in this sector. Miguel and Sergio are both very aware that quality is the number one issue that needs to be worked into the picture.

Met with Reinaldo Fiallos and discussed with him on some of the wet mill locations proposed. Most of the sites proposed lack access to electrical power which implies the use of gasoline motor-coupled machinery. We agreed to visit some of the sites the following day on a programmed visit to the Somoto area.

Went to AID-Managua offices together with Lance Leverance and James Johnson to debrief them on the ARAP coffee assignment and put them up to date with the overall strategy. Met there with Mario Brockman, Efrain Laureano, Ray Baum and Tomas Membreño.

June 16, 2000

Traveled to Esteli to meet with Ali Valdivia and Reinaldo Fiallos in Somoto. Reinaldo took us first to La Sabana which is located approximately 27km from the dry mill facilities in Somoto. We met there with town Mayor, Javier Castrellon, whom was well aware and offers full support to Fundacion Fiallos' project. We then traveled to El Castillito (2km) from La Sabana where they want to locate one of the centralized wet mills. The site although does not have access to electricity is ideal. Fortunately that same day we ran into ENEL local authorities and after discussing with the Mayor they agreed to look into the possibility of installing electrical lines into El Castillito. Apparently there was already an electrical power distribution project in place for this community promoted but never executed by the past Mayor.

We then departed to another site in Quebrada Hondo where access to both 3 phase and mono phase electricity is possible. The location proposed also is appropriate as it will be of easy access for the growers and for further transport of the de-pulped coffee to the dry mill.

June 19-20, 2000

Worked on report at ARAP office.

Discussed with Ali Valdivia results from his visit with Conor 3-80 on June 19th. Conor 3-80 has recently elected Mr. Alex Talavera as President for this organization. He disagrees with the previous proposal of locating wet mills in 2 locations, Quilali and Mozonte as previously presented by former president Salvador Talavera. Alex has held meetings with the growers in the surrounding areas where they stated that at it would be practically impossible for them to deliver coffee on a daily basis to those locations. They propose instead the following wet mill locations:

Providencia	1 wet mill
Bujon	1 wet mill
Ventillas	1 wet mill
Zapotillal	1 wet mill
La Palanca	1 wet mill
La Luz	2 wet mills
Quilali	1 wet mill

Mr. Alex Talavera has decided to not included coffees from the Mozonte area as it will be too big of a logistics problem for Conor 3-80 to handle at this time. The dry mill will then be located in Quilali to process coffees collected from the 8 wet mills.

Recommendations

Coffee fields are usually located in the mountainous areas where each individual farmer performs to his understanding some type of wet mill processing. If we take into consideration that uniformity and control of all the coffee processing cycle is the key to an excellent quality, we have a series of conditions due to the nature of how the business is conducted in Nicaragua that contributes to add too many variables into the quality equation. The small grower lacks a direct access to the market and therefore is forced to fall in the hands of several middleman. This has a negative impact on the grower's net return.

The step after production that provides continuity in the quality chain is installation of proper processing infrastructure. There is an urgent need to centralize as much of the

processing infrastructure as possible. Ideally coffee production, wet milling, dry milling should all be located in the same place as each part of the process requires careful monitoring and a timed sequence decision which is critical to guarantee cup quality. Most production areas are located distantly from any type of dry milling operation and hence adopting the non washed coffee technology requires careful post harvest planning and transport logistics. Mechanical methods can not remove mucilage completely, which implies a breakdown through fermentation if water remains present on the coffee bean parchment surface area for long periods of time.

Fermented and washed coffees can resist a little longer the time lag involved between the wet mill and the dry mill set up present in most Nicaraguan operations, which rely on the sun as the primary drying method. It is critical if this is the case that coffee be washed and transported preferably during the early morning hours so that it can be immediately spread onto the cement slabs to begin removing surface water by the heat generated by the sun and the constant turn over of the workers. Mechanical drum drying systems could be a solution in not having to transport coffee to a different area than where the wet mill is located and hence, cutting costs down considerably in transport and extra handling. The heat source for these dryers can be obtained from burning wood or propane gas. Coffee pruning generates considerable amounts of wood that could be used without having to rely on the already scarce forest reserve. Electricity would be needed to move all motors, which on the other hand is also a limiting factor to some of the locations.

There is however a huge potential for hydroelectric generation in many of the production areas. Hydropower plants are used in many other coffee producing countries to generate electricity for use in the farming operation. Small units from 5 to 100 kilowatt capacity require rather simple infrastructure, which could easily be implemented here to provide consistent, and almost maintenance free electrical power for any type of activity. A site located on Mr. Harmogenes' farm for example should be considered for this as water volume, existent topography and total head are ideal for a project with considerable generation potential.

In determining the equipment needs for each mill the following criteria should be considered:

Wet Mills

1. Determine the amount of growers to be serviced per beneficio that could provide a uniform flow of coffee beans in the process. De-pulping machinery should be installed proportional to daily cherry volume delivered.
2. Easy access to the beneficio for the growers. Growers will have to deliver their harvested cherry beans daily which weigh more than parchment coffee and hence travel distances should be kept short.
3. Build a wooden reception siphon type structure to receive the cherries that feeds to de-pulping machinery located beneath it.
4. Standardize coffee cherry measurements. Traditionally farmers use "the lata" as a volume measure. Manually quantifying measuring one lata at a time can be very time consuming. 1 lata is equivalent to 29-31 pounds. A weight measure can be a more accurate, reliable, less time consuming process than the volume measure which at time can be very subjective especially when dealing with incomplete measures such as the $\frac{1}{4}$, $\frac{1}{2}$, or $\frac{3}{4}$ lata. Weight measurements will also factor in

quality problems as beans with disease problems (broca, ojo de gallo, chasparria,etc) or immature beans weigh less than otherwise healthy and fully mature beans.

5. Water availability is a must. Even though most growers are looking at ecological alternatives in processing, the need for some source of water cannot be totally eliminated. New coffee processing equipment currently available has been designed taking into consideration minimization of water contamination at the de-pulping stage.
6. Construction of fermentation tanks. Cement tanks or plastic bins can be used. Total number of tanks should equal at least two day's worth of production, as fermentation times will vary depending on altitude and air temperature. At higher elevations fermentation times will be longer and sometimes in excess of 24 hours. This implies that the fermentation tank from the previous day will still be occupied at the time the new coffee cherries are de-pulped.
7. The need for fermentation can either be shortened or completely eliminated with the use of de-mucilaging equipment. De-mucilaging equipment can be used to bypass fermentation however parchment coffee should be introduced into a drying system immediately. It can also be used as a washing mechanism and hence cutting down fermentation hours considerably and water use as well.
8. If fermentation is to be used then traditional washing canals can be built to perform both the washing process as well as a preliminary classification.

Dry Mill

1. To rely on sun drying it is recommended to allow for at least 18m² of cement slabs per 1000 kilo of parchment coffee. Not having enough space to dry coffee can produce fatal results regardless of how good a wet milling process has been executed.
2. Mechanical drum dryers can be used to either substitute cement slabs or to complement these. Cement slabs can be used as pre-drying stage to lower humidity levels to around 20% and then finished of in the drum dryers to 12%. Bringing coffee from completely wet down to 20% on the slabs can take from 2-3 days. 18 hours more inside a drum dryer would bring humidity level down to 12%. Moisture meters are highly recommended in order to monitor the drying process at all times.
3. De-hulling/polishing machinery should be used based on the total volumes processed. Different capacity models are available depending on total output required.
4. After de-hulling coffee can be fed into screen type classification machinery which will sort according bean size.
5. The next and final classification system following screen size will be by bean density.

Marketing is the other component of the quality chain that must be structured. Any individual marketing approach must be accompanied or should be backed by a country generic promotional campaign. Before anyone starts selling a specific brand, Estate or

region it is necessary to sell Nicaragua as an origin. If all exporters unite their criteria in doing this they can all contribute favorably to promote one clear image of Nicaragua as a quality oriented coffee producing country. The Programa Nacional de Competividad is a very good mechanism to structure this approach which will require a change of many of the existing structures. The smaller grower groups also need to be strengthened in order for them develop sound business expertise in this area.

Installing mills requires strong initial funding, however, further funding is needed to be able to purchase and store coffee. Each owner of a mill be it a single person or an association, must have at a given time the resources available to be able to lock into a given production. It should not rely on receiving coffee on a consignment basis as this evidently passes all the financial costs to the grower. It must be able to take full possession of the product and carry on with all costs from then on, unless the growers agree to participate with the market risks and hence would be entitled to a final price adjustment (positive or negative) at completion of the sale.

A complete training in inventory management and sound accounting principles must be put in place for each one of the associations. This will be critical in determining breakeven points and will be necessary in determining actual costs and process yields. Coffee processing involves assembling inventory items (coffee cherries, parchment coffee and de-hulled coffee “oro”), into a final product which can be very tricky if accurate inventory records, transformation units and yield measurements are not taken.

Aroma Nica (Fundación Fiallos)

This organization is perhaps the role model to be adopted by any of the associations or grower groups. Although this group has positioned itself in the export market it requires improvement in its infrastructure to handle the increased production of the 240 growers in peak years. De-pulping machinery should be installed in centralized areas as proposed in their project presentation and in the dry mill a bean size selection unit installed located prior to the densimetric machine currently in use.

The idea of separating coffees from 240 growers poses to be a nightmare in logistics for the mill. It implies monitoring 240 fermentations hours and 240 mini batches everyday which at the end of the harvest in many cases will not amount to an exportable unit per grower and would require combining several of the total volumes to make a container load. Although recommendations for cupping individual loads has been suggested, it is perhaps more important to concentrate on improving the overall batch quality produced from each of the wet mills to be installed. If proper and uniform fermentation times, adequate washing and pre-classification procedures are reproduced and replicated there on for each batch, then the overall quality will also be uniform.

ASECOFEMAT

They need to understand that as they get involved in the milling infrastructure, each production unit has to be set up independently, that is production is one unit, the wet mill another, the dry mill the other and the marketing unit the final one. Each one is a business in itself and has to be set up accordingly.

The service provided to their members should not be individualized. They should pool in and market as a whole. They should organize a marketing office, which could purchase

coffee at a standard price from the growers and liquidate a final price when the export has been completed.

Provide an education program to their growers so that they can understand the benefits of marketing as a whole and of belonging to the association and thus of all the services available to him through this organization.

AMDES

This is perhaps the second largest project apart from ASOCAFEMAT. The size of the operation requires careful planification and training of personnel to run the mill. The administrative capacity of this organization seems to be its strong asset as well as its capacity to manage funding. No marketing experience exists and will require further assistance. Since only running a dry mill is their objective it will be necessary for them to differentiate themselves from the other mills in order to guarantee a steady flow of product through the mill. They will need to compete with the other mills not only in pricing but also in providing better services to their members. If they were to purchase the production from the growers for example at a fixed price at 75% to 80% of the international market prices it would allow the growers improve their cash flows and partially eliminate his risks in playing the international market themselves for which they lack the necessary market information anyway. AMDES would then take full possession of the product and hence negotiate futures contracts for the bulk of the coffee without getting the grower involved in the process.

UCA Miraflores

This group needs to clarify on its marketing approach. It seems that they had originally only contemplated organic as their only alternative although the core of their business is still composed of non-organic farmers. They are ecologically conscientious group, which could be a great marketing tool for their coffees. Assistance should be provided in running and managing a wet/dry mill operation as well as in marketing coffee. Centralization of their wet mill could work since they already have transport problems solved as they own their own trucks.

POLDES

POLDES project will be quite similar to CONOR 3-80 as they have areas with restricted access during the harvest season and with lack of electricity to locate a centralized wet mill in the area. A series of smaller wet mills will have to be installed in each municipality coupled to diesel or gasoline engines.

CONOR 3-80

The final decision of installing 8 wet mills instead of 2 although will alleviate transport problems for the growers will still require careful monitoring of 8 different but simultaneous processes. CONOR needs to prepare itself to be able to do staff these wet mill and establish uniform procedures for each in order to produce and guarantee a uniform quality for the coffees.

HARMOGENES IBARRA

Cupping results from 2 samples sent to Holland Coffee(California), Inc. in San Francisco, CA clearly confirm what was suspected. There is a fermentation problem due to improper handling of the de-pulped / de-mucilaged/ unwashed coffee . The cupping profile refers it

to medium to low body, slightly sour and harsh which are indicators of excess and uncontrolled fermentation in the process. The use of Penagos de-pulping and de-mucilaging equipment is not recommended under the current conditions unless he improves either his transport logistics and provides immediate drying alternatives. Installing drum dryers at his wet mill location will allow him to eliminate the need to transport wet coffee on a daily basis to Palacaguina. He can transport it there once it has been partially dried or dried completely. The term SCAA2 refers to the type of preparation at the dry mill. This indicates perhaps that his equipment has not been calibrated properly (amount of silverskin) and that his drying has not been uniform which could cause the slight fade present on the bean.

Hydropower generation at Mr. Talavera's farm is not feasible with the inputs provided. A 45 meter head, 163 meter penstock and only 3.46 l/s water flow is only enough to produce roughly 1.2 KW.

They will require marketing training as well as on managing the mills. The dry mill to be located in Quilali will be of considerable size and will require sound business expertise to manage it successfully.

The general pattern of conducting business is almost the same for each one of the associations. It will be necessary to provide assistance in running the milling operations accompanied with a marketing strategy for each group.

It is critical to identify which machinery is appropriate for each outfit and place the order with the manufacturer. To choose which machines are suitable it is necessary to take into account total production as well as an estimated daily volume. It will take approximately 60 days from the time the order is placed until delivery. This does not take into account transit times from factory to Managua and for any customs processing. Locally made machinery can also be purchased although the local manufacturers do not have the installed capacity to turn out the amounts of machines contemplated in the ARAP project. Coffee harvest is only 150 days away and timing is essential in setting the projects up successfully.

Attached:

Summary of each project requirements

List of Wet milling Equipment Spec and Prices (CIF Managua)

List of Dry Milling Equipment Specs and Prices (CIF Managua)

Contact Information for Manufacturers/Distributors

Flow Design of Wet Mill

Machinery quotes and spec sheets

Cupping results for 2 Nicaraguan Coffees